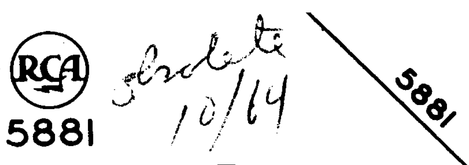


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BEAM POWER TUBE

For audio-frequency power amplifier applications

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage	6.3	ac or dc volts
Current	0.9	amp

Mechanical:

Mounting Position	Any
Maximum Overall Length	3-15/32"
Maximum Seated Length	2-29/32"
Maximum Diameter	1-7/16"
Bulb	T11
Base	Short Intermediate-Shell Octal 7-Pin with External Barriers (JETEC No.B7-59)
Basing Designation for BOTTOM VIEW	7AC

Pin 1 - No Connection
Pin 2 - Heater
Pin 3 - Plate
Pin 4 - Grid No.2
Pin 5 - Grid No.1
Pin 7 - Heater
Pin 8 - Cathode, Grid No.3

AF POWER AMPLIFIER - Class A_1

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	400 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	400 max.	volts
GRID-No.2 INPUT	3 max.	watts
PLATE DISSIPATION	23 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 max.	volts

Typical Operation and Characteristics:

Plate Voltage	250	300	350	volts
Grid-No.2 Voltage	250	200	250	volts
Grid-No.1 (Control-Grid) Voltage	-14	-12.5	-18	volts
Peak AF Grid-No.1 Voltage	14	12.5	18	volts
Zero-Signal Plate Current	75	48	53	ma
Max.-Signal Plate Current	80	55	65	ma
Zero-Signal Grid-No.2 Current	4.3	2.5	2.5	ma
Max.-Signal Grid-No.2 Current	7.6	4.7	8.5	ma
Plate Resistance (Approx.)	30000	35000	48000	ohms
Transconductance	6100	5300	5200	µmhos
Load Resistance	2500	4500	4200	ohms
Total Harmonic Distortion	10	11	13	%
Max.-Signal Power Output	6.7	6.5	11.3	watts

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Maximum Circuit Values:

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

AF POWER AMPLIFIER - Class A_1

Triode Connection - Grid No.2 Connected to Plate

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	400 max.	volts
PLATE DISSIPATION	26 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 max.	volts

Typical Operation and Characteristics:

Plate Voltage	250	300	volts
Grid-No.1 (Control-Grid) Voltage	-18	-20	volts
Peak AF Grid-No.1 Voltage	18	20	volts
Zero-Signal Plate Current	52	78	ma
Max.-Signal Plate Current	58	85	ma
Amplification Factor	8	-	
Transconductance	5250	-	μmhos
Load Resistance	4000	4000	ohms
Total Harmonic Distortion	6	5.5	%
Max.-Signal Power Output	1.4	1.8	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

PUSH-PULL AF POWER AMPLIFIER - Class A_1

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	400 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	400 max.	volts
GRID-No.2 INPUT	3 max.	watts
PLATE DISSIPATION	23 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 max.	volts

Typical Operation:

Unless otherwise specified, values are for 2 tubes

Plate Voltage	250	270	volts
Grid-No.2 Voltage	250	270	volts
Grid-No.1 (Control-Grid) Voltage	-16	-17.5	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	32	35	volts

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Zero-Signal Plate Current. . .	120	134	ma
Max.-Signal Plate Current. . .	140	155	ma
Zero-Signal Grid-No.2 Current.	10	11	ma
Max.-Signal Grid-No.2 Current.	16	17	ma
Plate Resistance (Approx., per tube).	24500	23500	ohms
Transconductance (Per tube). .	5500	5700	µmhos
Effective Load Resistance (Plate to plate)	5000	5000	ohms
Total Harmonic Distortion. . .	2	2	%
Max.-Signal Power Output . . .	14.5	17.5	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

PUSH-PULL AF POWER AMPLIFIER - Class AB_1

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE.	400 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE.	400 max.	volts
GRID-No.2 INPUT.	3 max.	watts
PLATE DISSIPATION.	23 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	200 max.	volts
Heater positive with respect to cathode.	200 max.	volts

Typical Operation:

Values are for 2 tubes

Plate Voltage.	360	360	volts
Grid-No.2 Voltage.	270	270	volts
Grid-No.1 (Control-Grid) Voltage†	-22.5	-22.5	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage.	45	45	volts
Zero-Signal Plate Current. . . .	88	88	ma
Max.-Signal Plate Current. . . .	132	140	ma
Zero-Signal Grid-No.2 Current. .	5	5	ma
Max.-Signal Grid-No.2 Current. .	15	11	ma
Effective Load Resistance (Plate to plate)	6600	3800	ohms
Total Harmonic Distortion. . . .	2	2	%
Max.-Signal Power Output	26.5	18	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:†

For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

†: See next page.

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BEAM POWER TUBE

PUSH-PULL AF POWER AMPLIFIER - Class AB_1

Triode Connection - Grid No.2 Connected to Plate

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	400 max.	volts
PLATE DISSIPATION	26 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 max.	volts

Typical Operation:

Values are for 2 tubes

Plate Voltage	400	volts
Grid-No.1 (Control-Grid) Voltage†	-45	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	90	volts
Zero-Signal Plate Current	65	ma
Max.-Signal Plate Current	130	ma
Effective Load Resistance (Plate to plate)	4000	ohms
Total Harmonic Distortion	4.4	%
Max.-Signal Power Output	13.3	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:†		
For fixed-bias operation	0.1 max.	megohm
For cathode-bias operation	0.5 max.	megohm

PUSH-PULL AF POWER AMPLIFIER - Class AB_2

Maximum Ratings, *Design-Center Values:*

PLATE VOLTAGE	400 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	400 max.	volts
GRID-No.2 INPUT	3 max.	watts
PLATE DISSIPATION	23 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200 max.	volts

Typical Operation:

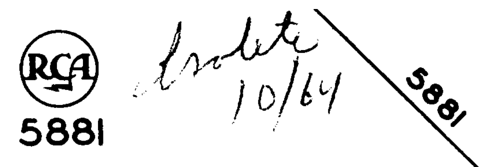
Values are for 2 tubes

Plate Voltage	360	360	volts
Grid-No.2 Voltage	225	270	volts
Grid-No.1 (Control-Grid) Voltage■	-18	-22.5	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	52	72	volts
Zero-Signal Plate Current	78	88	ma

† The type of input coupling used should not introduce too much resistance in the grid-No.1 circuit. Transformer- or impedance-coupling devices are recommended.

■: See next page.

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Max.-Signal Plate Current . . .	142	205	ma
Zero-Signal Grid-No.2 Current .	3.5	5	ma
Max.-Signal Grid-No.2 Current .	11	16	ma
Effective Load Resistance (Plate to plate).	6000	3800	ohms
Total Harmonic Distortion . . .	2	2	%
Max.-Signal Power Output. . . .	31	47	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:■
For fixed-bias operation. . . . . 0.1 max. megohm
For cathode-bias operation. . . . . Not recommended

■ Driver stage should be capable of supplying the specified driving power at low distortion to the No.1 grids of the AB_2 stage. To minimize distortion, the effective resistance per grid-No.1 circuit of the AB_2 stage should be held at a low value. For this purpose, the use of transformer coupling is recommended.

Curves shown under Types 6L6, 6L6-G also apply to the 5881

